

KODT2200 Optical Fiber Terminal Software Operation Manual



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Contents

Preface	1
1 Overview.....	3
2 Installing Network Management Software	4
3 Terminal Configuration.....	8
3.1 Local Management.....	9
3.1.1 Login.....	9
3.1.2 Configuration	10
3.2 Network Management	19
3.2.1 Login.....	19
3.2.2 Configuration	20
4 Typical Configuration Examples	31
4.1 Dual-Fiber Ring Redundancy.....	31
4.2 Local Data Cross-Connect	33

Preface




This manual describes how to use the KylandODT network management software to configure and manage KODT2200 and KODT2200B optical fiber terminals.

Conventions in the manual

1. Text format conventions

Format	Explanation
< >	The content in < > is button name. For example, click <Apply> button.
[]	The content in [] is window name or menu name. For example, click [File] menu item.
{ }	The content in { } is a portfolio. For example, {Send To, Port, Description} means Send To, Port, and Description are a portfolio and they can be configured and displayed together.
→	Multi-level menus are separated by “→”. For example, Start → All Programs → Accessories. Click [Start] menu, click the sub menu [All programs], then click the submenu [Accessories].
/	Use / to separate two or more options, and select one from all options. For example “Addition/Deduction” means addition or deduction.
~	It means a range. For example, “1~255” means the range from 1 to 255.

2. Symbol conventions

Symbol	Explanation
 Caution	The matters need attention during the operation and configuration, and it is supplement to the operation description
 Note	Necessary explanations to the operation description
 Warning	The matters that call for special attention. Incorrect operation might cause data loss or damage to devices

Document Obtainment

You can obtain the documents from:

- CD or manual delivered with the device
- Kyland website: www.kyland.cn

1 Overview

KODT2200 optical fiber terminals are applicable to many fields, including power distribution network automation, sewage treatment automation, industrial process control, SCADA, and transportation control. KODT2200 provides extensive ports, such as RS232, RS422, and RS485 ports, and eight full-duplex data channels to achieve the 8×8 cross-connect function. The dual-fiber ring redundancy technology enhances communication reliability, and the backup center terminal ensures continuous network communication.

The series products can be managed and maintained through the KylandODT (KODT) network management software developed by Kyland. The software covers local management and network management. With local management, you can set parameters for the local terminal, while network management allows you to query in real time the overall operation status of the network, the current running status of terminals, system alarm and log information.

**Note:**

This manual describes how to configure KODT2200 with local management and network management functions.

2 Installing Network Management Software

You can find the KODT network management software in the [Software download\KylandODT management] folder in the delivered CD.

1. Copy the [KylandODT management] folder to a PC.
2. Open the [KylandODT management] folder. Double-click Setup.exe. The InstallShield Wizard dialog box is displayed, as shown in the following figure.

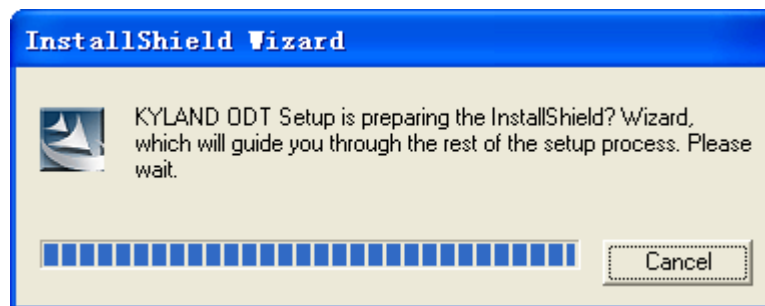


Figure 1 Preparing for Installation

3. If firewall software displays a warning, choose to continue with the installation. The following dialog box is displayed.

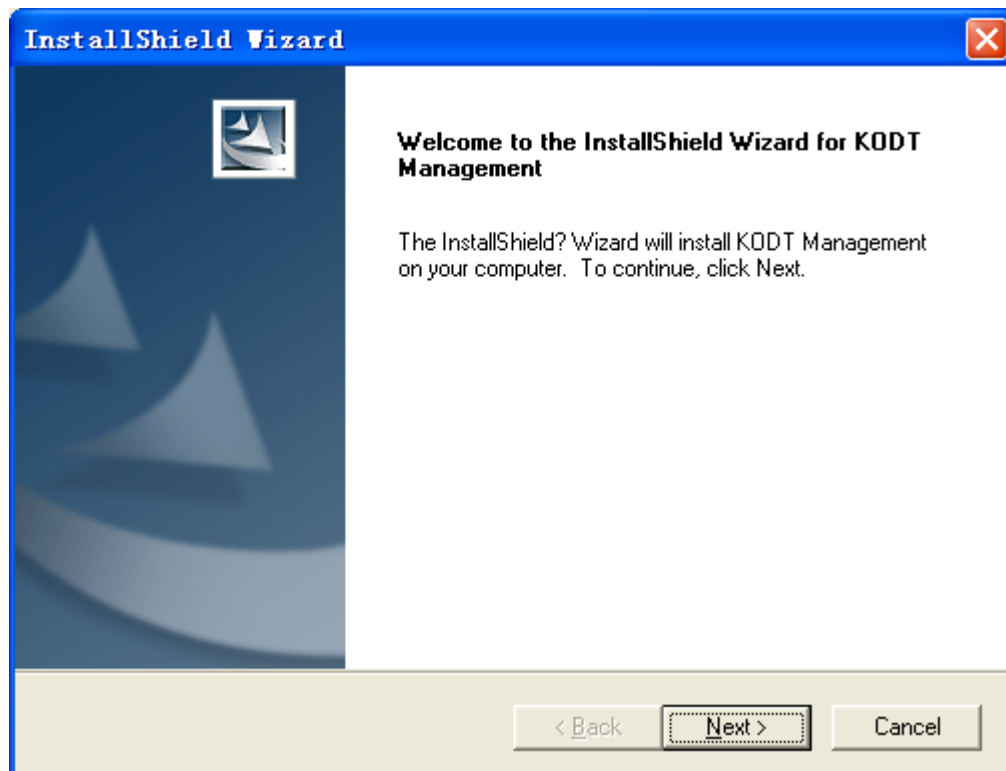
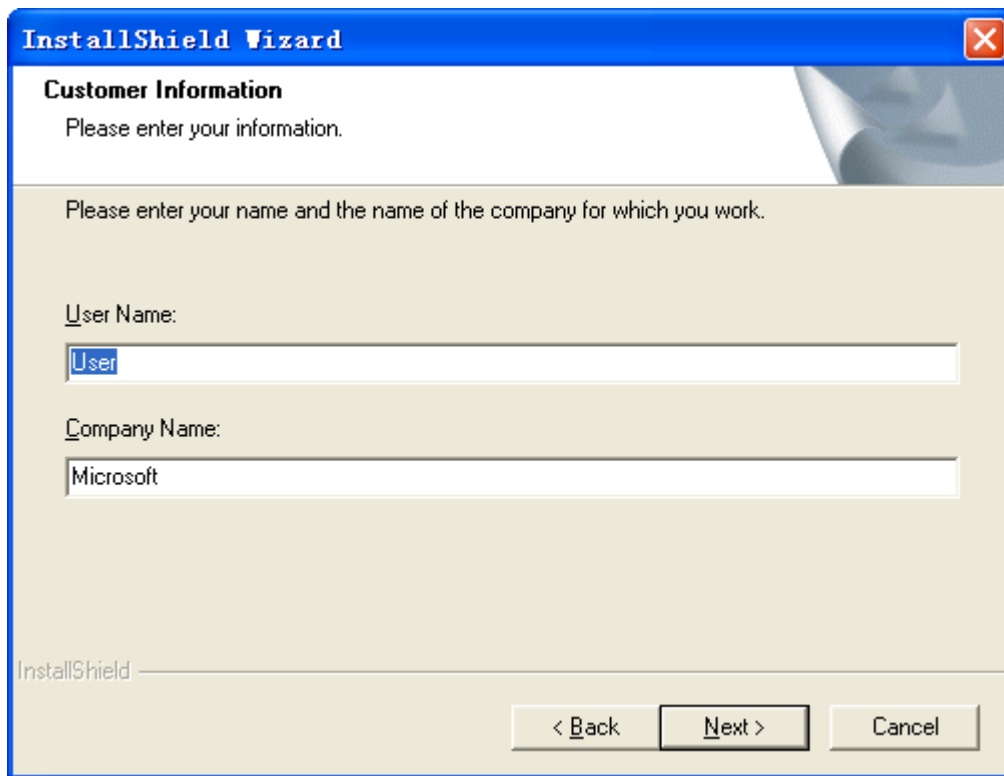


Figure 2 KODT InstallShield Wizard

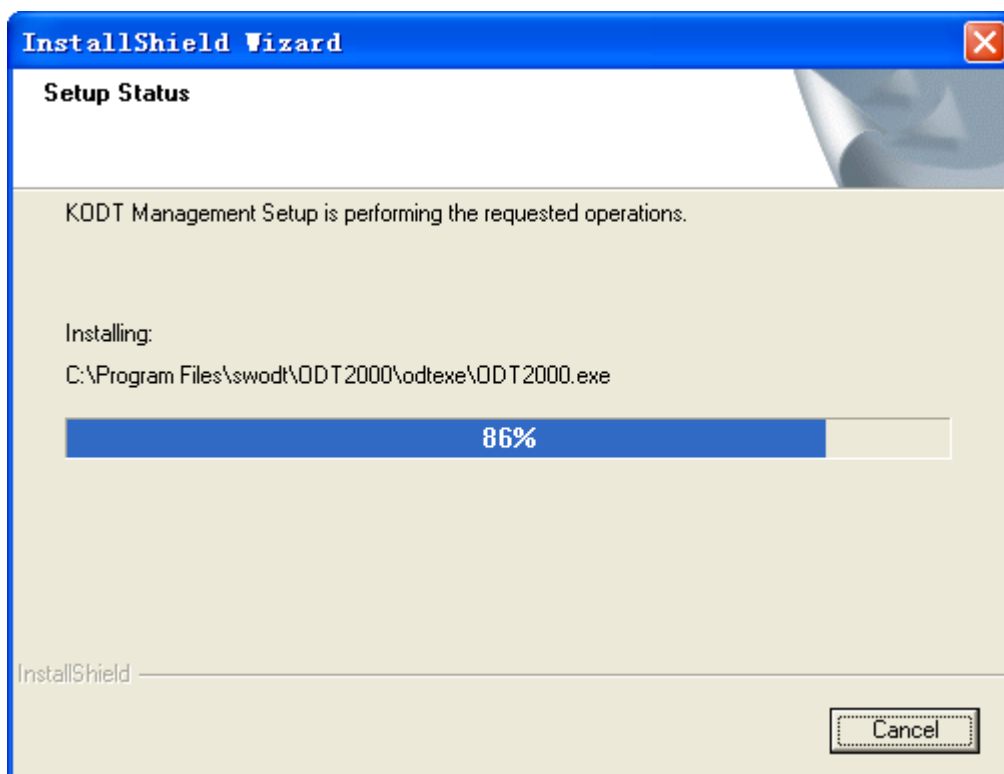
4. Enter the user name and company name. Click <Next>.



The screenshot shows the 'InstallShield Wizard' window with the 'Customer Information' tab selected. The window has a blue title bar with the text 'InstallShield Wizard' and a red close button. Below the title bar, the text 'Customer Information' is displayed, followed by 'Please enter your information.' and a decorative image of a rolled-up document. The main area contains the instruction 'Please enter your name and the name of the company for which you work.' Below this, there are two text input fields. The first is labeled 'User Name:' and contains the text 'User'. The second is labeled 'Company Name:' and contains the text 'Microsoft'. At the bottom of the window, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'InstallShield' logo is visible in the bottom left corner.

Figure 3 Starting Installation

5. Complete the installation of the KODT network management system.



The screenshot shows the 'InstallShield Wizard' window with the 'Setup Status' tab selected. The window has a blue title bar with the text 'InstallShield Wizard' and a red close button. Below the title bar, the text 'Setup Status' is displayed, followed by a decorative image of a rolled-up document. The main area contains the text 'KODT Management Setup is performing the requested operations.' Below this, there is a section labeled 'Installing:' with the file path 'C:\Program Files\swodt\ODT2000\odt.exe\ODT2000.exe'. A progress bar is shown below the file path, with the text '86%' indicating the current progress. At the bottom of the window, there is a single button labeled 'Cancel'. The 'InstallShield' logo is visible in the bottom left corner.

Figure 4 Installation Progress

After the KODT network management software is installed, view the Control Panel of the PC. If there is no BDE Administrator, you need to install the BDE. The installation procedure is as follows:

1. Open the [KylandODT management\bde setup] folder. Double-click SETUP.EXE. The Setup dialog box is displayed, as shown in the following figure.

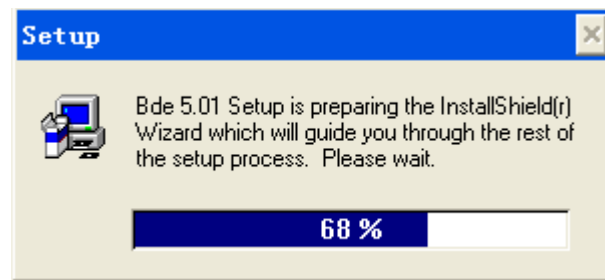


Figure 5 Preparing the BDE InstallShield Wizard

2. If firewall software displays a warning, choose to continue with the installation. The Welcome dialog box is displayed. Click <Next>, as shown in the following figure.

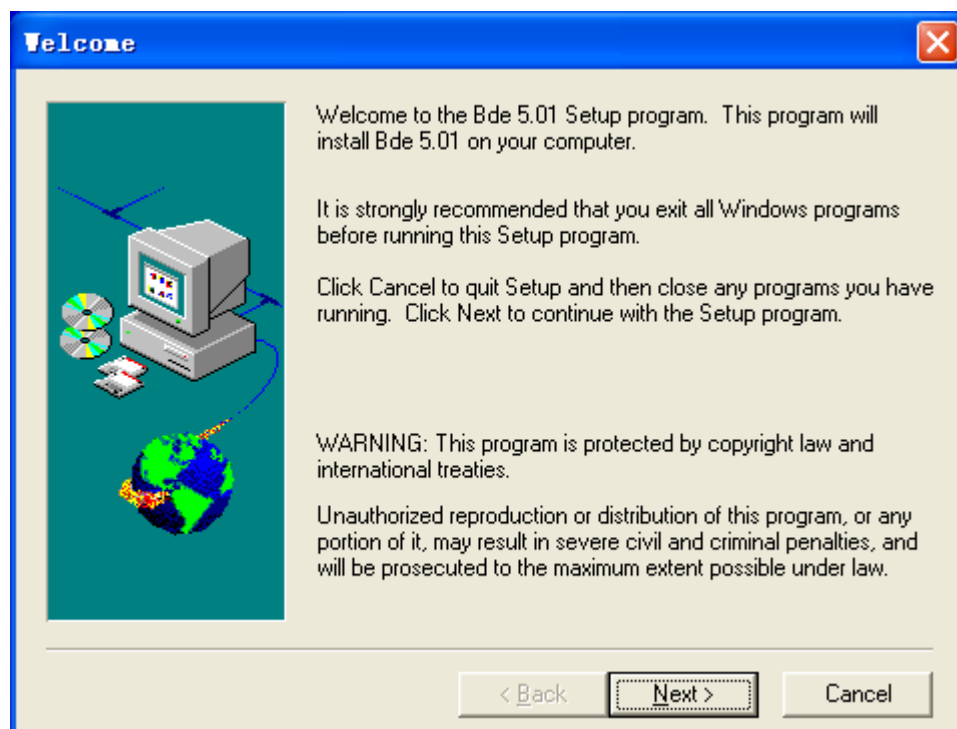


Figure 6 BDE InstallShield Wizard 1

3. The installation path is displayed, as shown in the following figure. Click <Next>.

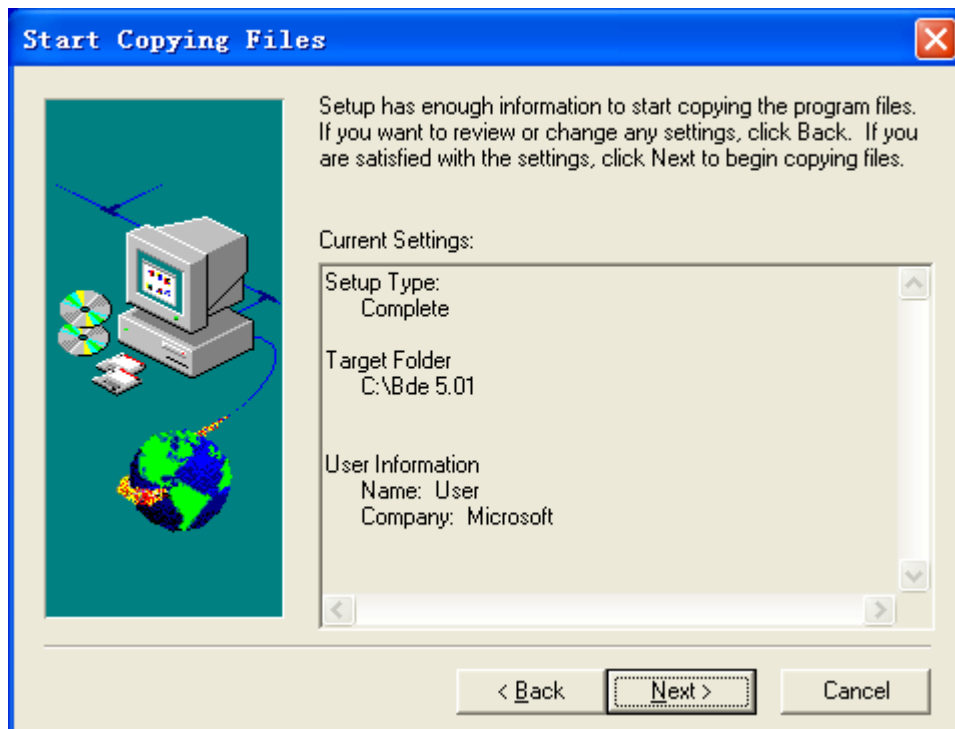


Figure 7 BDE InstallShield Wizard 2

4. The Setup Complete dialog box is displayed. Before using the program, you need to restart the PC to complete the installation. Click <Finish>.

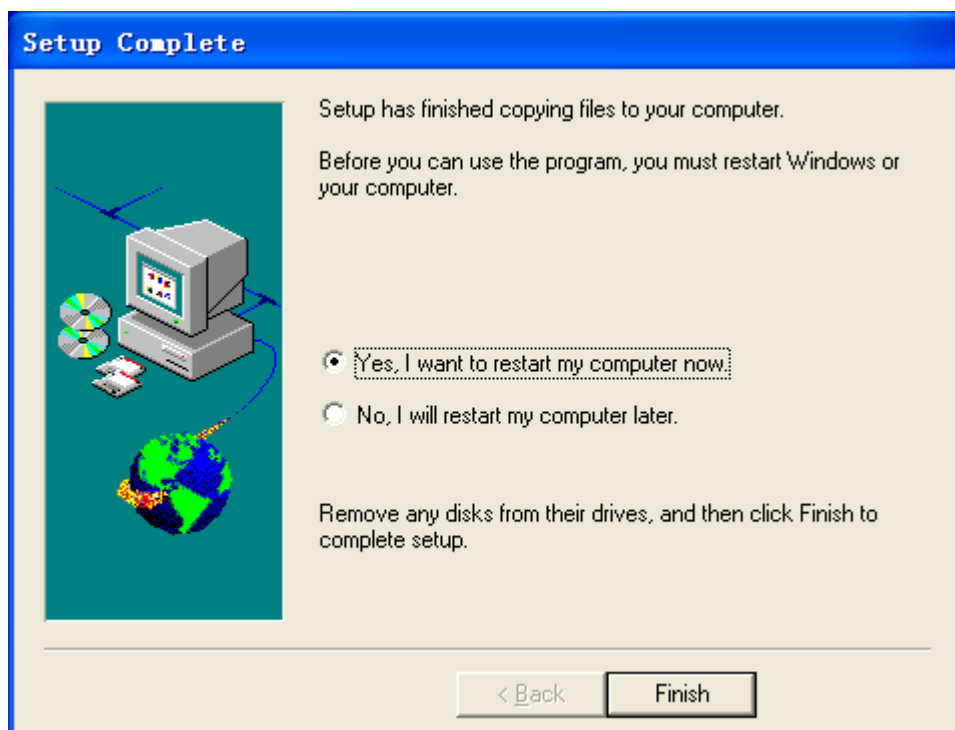


Figure 8 Completing BDE Installation

3 Terminal Configuration

After the KODT network management software is installed, you can click [Start] → [All Programs] → [KODT Management] → [KODT2000 Local Management]/[KODT2000 Network Management] to log in to the KODT Local Management or KODT Network Management interface, as shown in the following figure.



Figure 9 Starting the Network Management Software



Caution:

- You need to use an RJ11-DB9 local cable (or RJ11-DB9 network management cable) to log in to the local management interface (or network management interface).
- When you need to perform local or network management configuration, ensure the DEF and COT switches are OFF. If they are on, your configuration may fail to take effect.

3.1 Local Management

With local management, you can set parameters for the local terminal.

3.1.1 Login

1. Connect the console port of the local terminal to the DB9 port of a PC with an RJ11-DB9 local cable, as shown in the following figure.

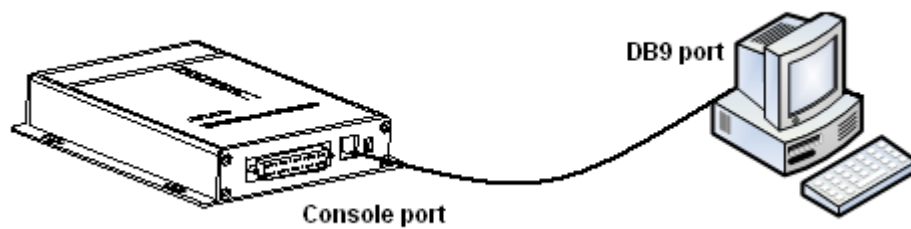


Figure 10 Connecting the Terminal to a PC

2. On the desktop of Windows OS, click [Start] → [All Programs] → [KODT Management] → [KODT 2000 Local Management] to log in to the Local Management interface, as shown in the following figure.

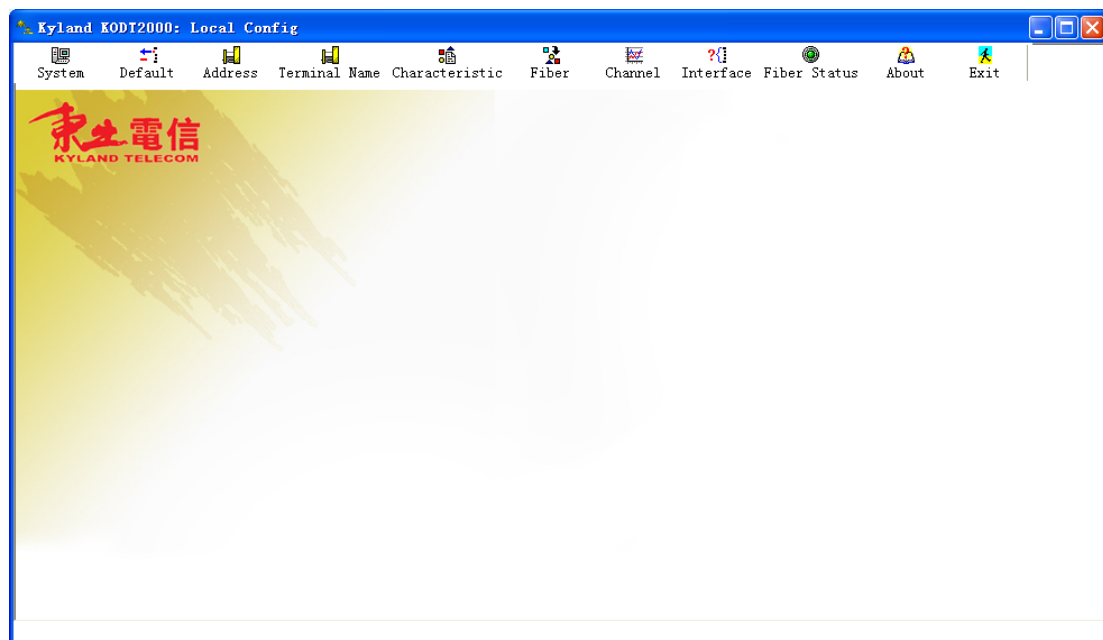


Figure 11 Local Configuration

3.1.2 Configuration

3.1.2.1 System Configuration

Click [System]. The System Config dialog box is displayed, as shown in the following figure.

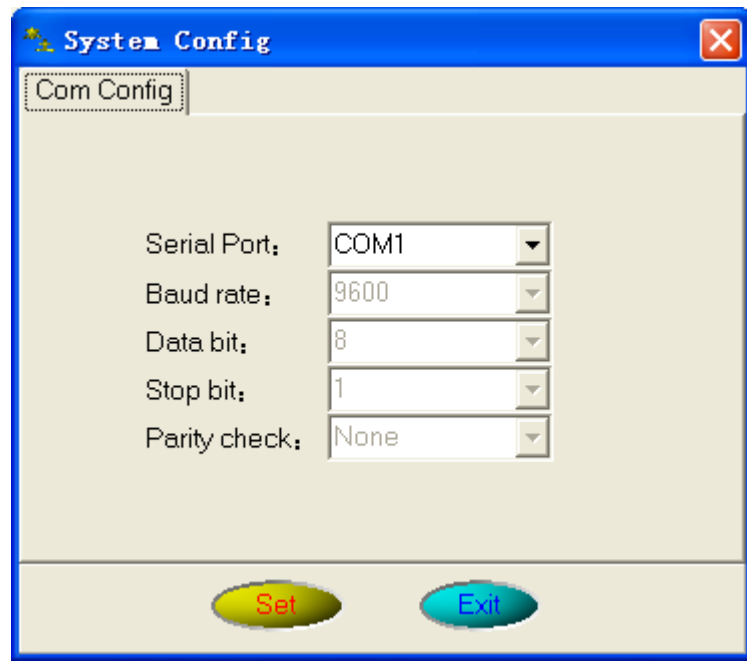


Figure 12 Parameter Setting

Serial Port

Options: COM1/COM2/COM3/COM4

Function: Select the serial port connected to the terminal.

Baud rate

Mandatory setting: 9600

Function: Set the baud rate of the serial port.

Description: Baud rate is the number of bits transmitted per second. It is an indicator of communication speed.

Data bit

Mandatory setting: 8

Function: Set the data bits of the serial port.

Description: Data bit is an indicator of the actual data bits in communication.

Stop bit

Mandatory setting: 1

Function: Set the stop bit of the serial port.

Description: Stop bit is the last bit of a single packet indicating transmission end. It also serves for clock synchronization.

Parity check

Options: None.

Function: Set the parity mode of the serial port.

Description: Parity is an error check mode for serial port communication. A check bit is transmitted besides the data bits to make the transmitted bits meet related standard. If the transmitted bits does not meet related standard, error code occurs. None indicates that transmitted data is not checked.

After you set these parameters, click <Set> to complete system configuration.

3.1.2.2 Default Configuration

Click [Default]. The Factory Default Config dialog box is displayed, as shown in the following figure.

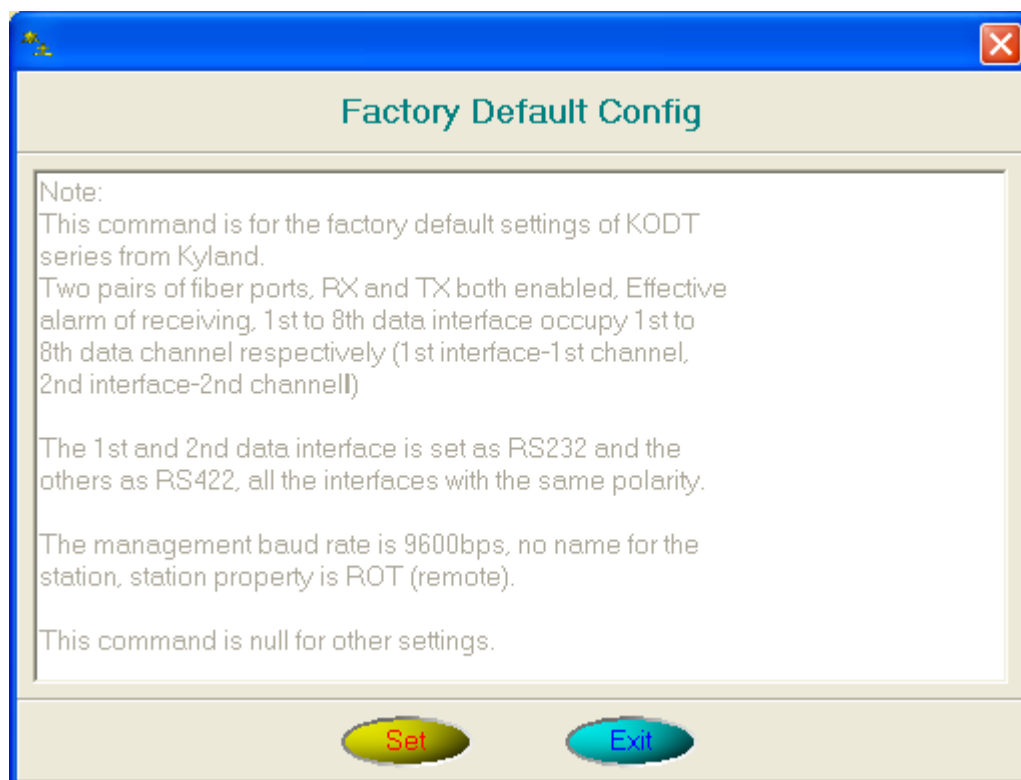


Figure 13 Factory Default Configuration

Factory Default Config

Function: Restore the factory default settings.

The factory default settings are as follows:

➤Fiber ports configuration

Number of fiber ports: two

The transmitting, receiving, and receiving alarm functions of port 1 and port 2 are enabled.

➤Channel configuration

Channel 1 is selected for data port 1.

Channel 2 is selected for data port 2.

...

Channel 8 is selected for data port 8.

➤Serial port configuration

The baud rate is set to 9600.

➤Terminal name configuration

None.

➤Terminal characteristic configuration

Remote terminal

➤Other configuration

Factory default settings do not include other configuration.

3.1.2.3 Address Configuration

Click [Address]. The Terminal Address Config dialog box is displayed, as shown in the following figure.

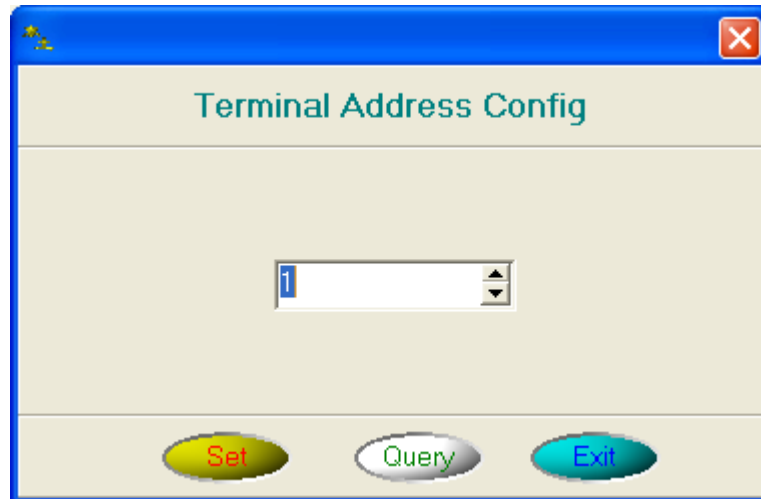


Figure 14 Terminal Address Configuration

Terminal Address Config

Function: Set the address number of the local terminal. When the center terminal manages the entire network, it distinguishes different terminals by their address numbers.

Configuration method: Enter the address number or click ▲ or ▼ to change the number.

You can click <Set> to complete setting or <Query> to view the current address number of the local terminal.

3.1.2.4 Terminal Name Configuration

Click [Terminal Name]. The Terminal Name Config dialog box is displayed, as shown in the following figure.

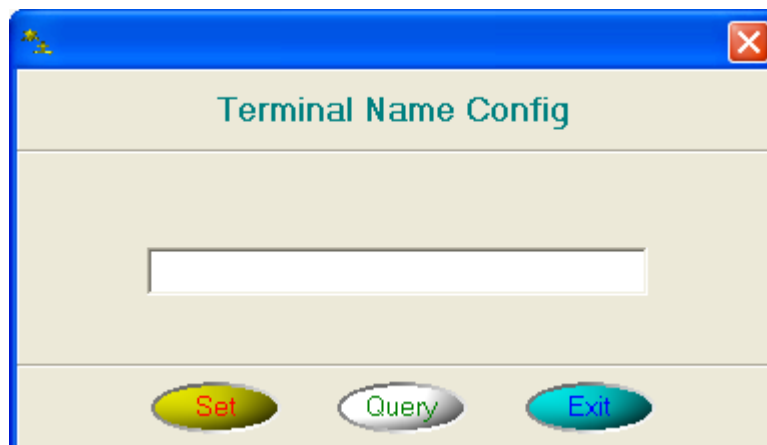


Figure 15 Terminal Name Configuration

Terminal Name Config

Function: Set the name of the local terminal.

You can click <Set> to complete setting or <Query> to view the current name of the local terminal.

3.1.2.5 Terminal Characteristic Configuration

Click [Characteristic]. The Terminal Characteristic Config dialog box is displayed, as shown in the following figure.

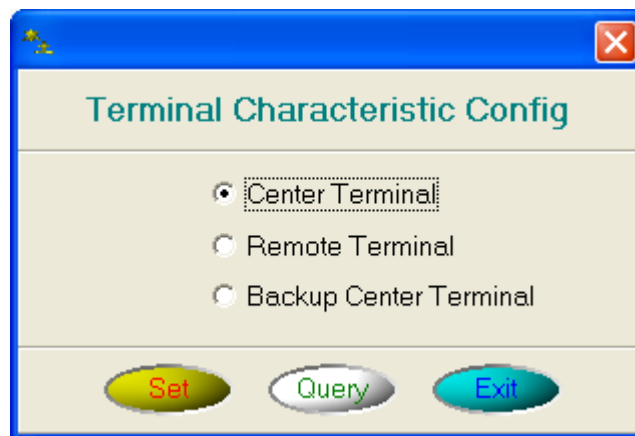


Figure 16 Terminal Characteristic Configuration

Terminal Characteristic Config

Options: Center Terminal/Remote Terminal/Backup Center Terminal

Default: Remote Terminal

Function: Set the role of the local terminal on the network. A center terminal is the master station in a ring network. A remote terminal is the slave station in the network. A backup center terminal is the backup of the center terminal. When the center terminal is faulty, the backup center terminal automatically takes over the tasks of the center terminal, ensuring continuous network communication and preventing data losses. Once the fault is rectified, the original center terminal takes over the tasks of the new center terminal, which then returns to the backup center terminal state.

**Caution:**

A ring network can contain only one center terminal, one backup center terminal, and multiple remote terminals.

You can click <Set> to complete setting or <Query> to view the current role of the local terminal.

3.1.2.6 Fiber Ports Configuration

Click [Fiber]. The Fiber ports Config dialog box is displayed, as shown in the following figure.

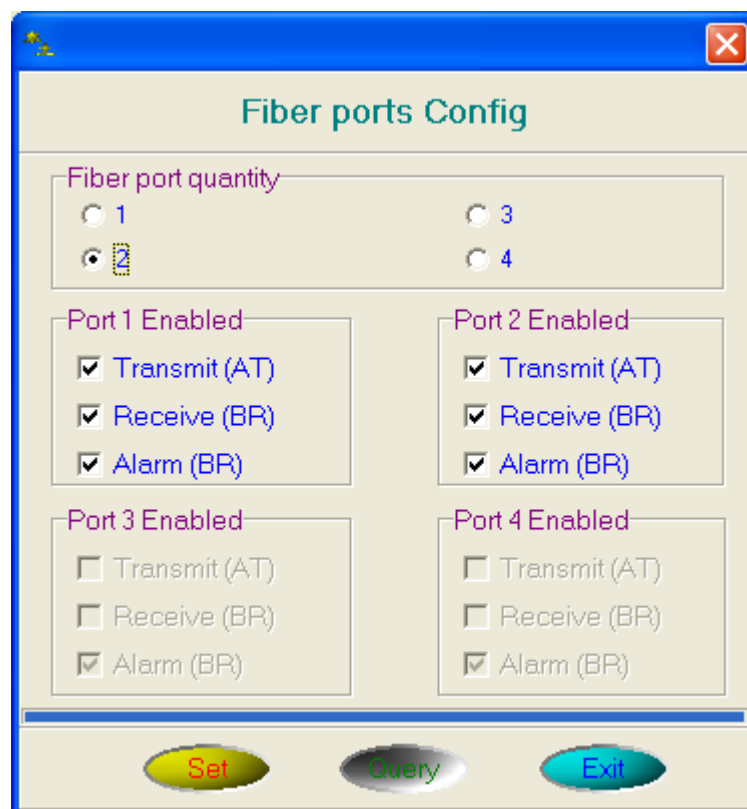


Figure 17 Fiber Ports Configuration

Fiber port quantity

Options: 1/2/3/4

Default: 2

Function: Set the number of fiber ports.

Port 1/Port 2/Port 3/Port 4 Enabled

Portfolio: {Transmit, Receive, Alarm}

Default: Port 1/Port 2 {Transmit (enabled), Receive (enabled), Alarm (enabled)}

Function: Enable or disable the sending, receiving, and receiving alarm functions of fiber ports.



Caution:

It is recommended to enable the sending, receiving, and receiving alarm functions of all configured fiber ports.

You can click <Set> to complete setting or <Query> to view the current fiber ports of the local terminal.

3.1.2.7 Channel Configuration

Click [Channel]. The Channel Config dialog box is displayed, as shown in the following figure.

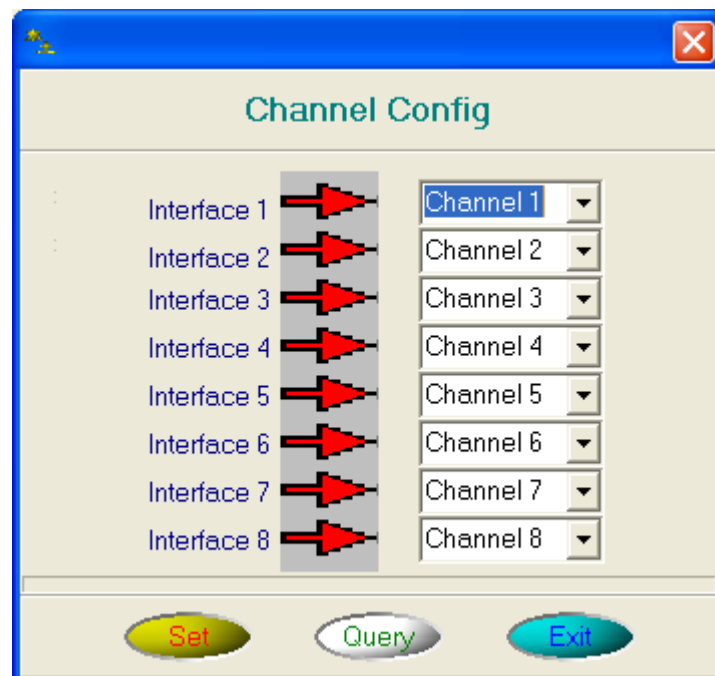


Figure 18 Channel Configuration

Channel Conifg

Options: Channel 1/Channel 2/Channel 3/Channel 4/Channel 5/Channel

6/Channel 7/Channel 8/Channel 9

Default: Channel 1 is selected for data port 1.

Channel 2 is selected for data port 2.

...

Channel 8 is selected for data port 8.

Function: Configure the mapping between data ports and channels. With this configuration, you can use the local data cross-connect function of the terminal. To be specific, when you map several ports to one channel, the terminal provides the function of a hub. For details, see section 4.2 Local Data Cross-Connect.

You can click <Set> to complete setting or <Query> to view the current channel configuration of the local terminal.

3.1.2.8 Interface Configuration

Click [Interface]. The Interface Config dialog box is displayed, as shown in the following figure.

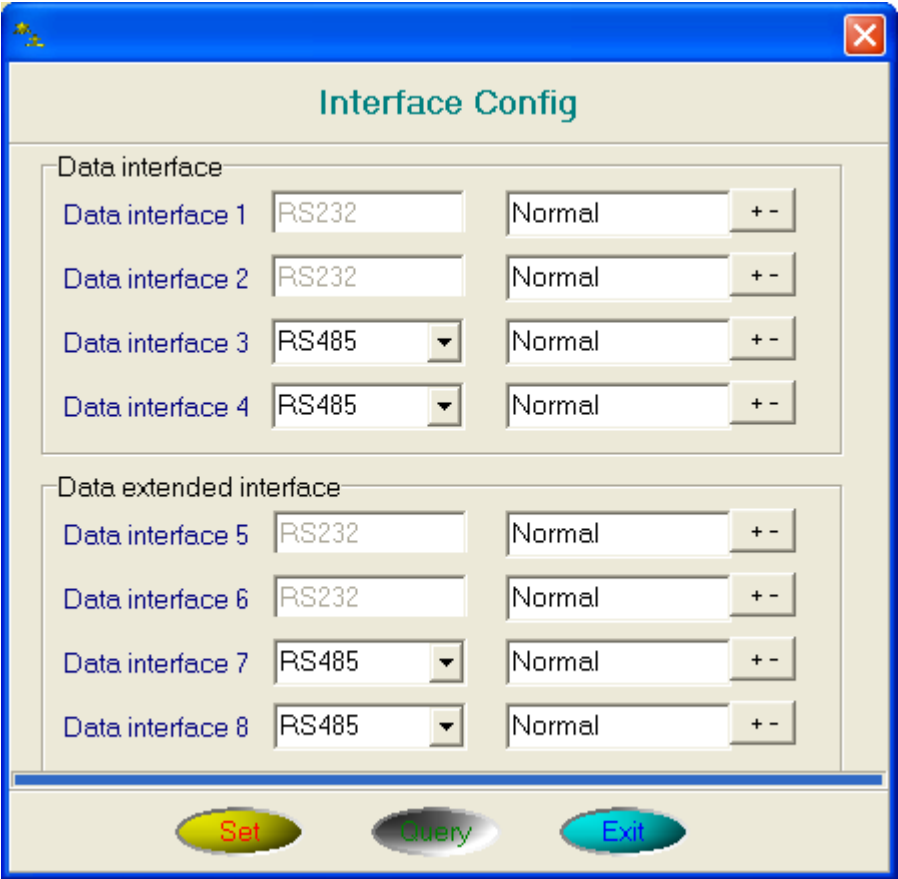


Figure 19 Interface Configuration

Interface Config

Options: RS232/RS422/RS485

Function: Configure the interface standard.



Note:

The interface standard shall be consistent with the actual physical wires connected to the pins.

You can click <Set> to complete setting or <Query> to view the current interface configuration of the local terminal.

3.1.2.9 Fiber Ports Status

Click [Fiber Status]. The Fiber Ports Status Config dialog box is displayed, as shown in the following figure.

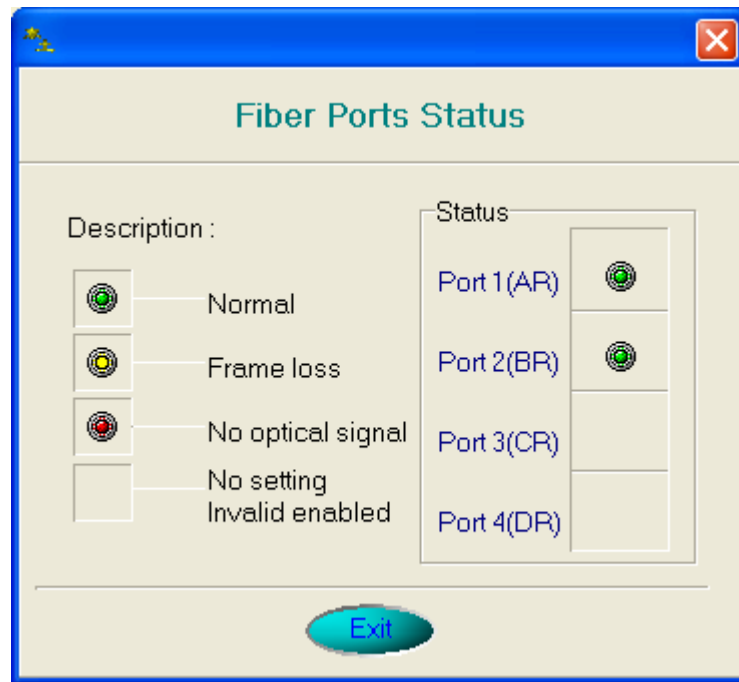


Figure 20 Fiber Ports Status

Fiber Ports Status

Function: Query the running status of fiber ports.

Note:  Indicates that a fiber port receives data normally.

 Indicates that frame losses occur.

 indicates that a fiber port receives no data.

3.2 Network Management

Network management allows you to configure terminals and view their current running status. This feature can help you in fault locating and maintenance.



Caution:

The network management functions are only available on a center terminal.

3.2.1 Login

1. Connect the console port of the local terminal to the DB9 port of a PC with an RJ11-DB9 network management cable, as shown in the following figure.

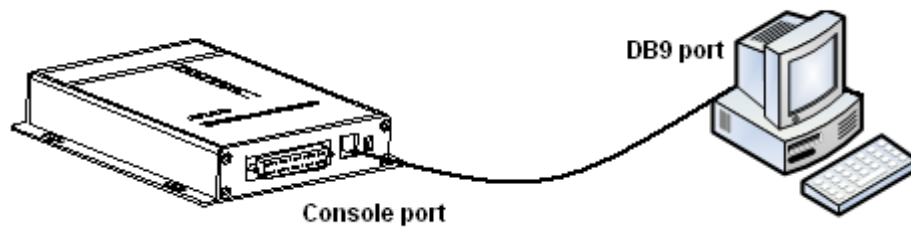


Figure 21 Connecting the Terminal to a PC

2. On the desktop of Windows OS, click [Start]→ [All Programs] → [KODT Management] → [KODT2000 Network Management] to log in to the Network Management interface, as shown in the following figure.



Figure 22 Network Management

3.2.2 Configuration

3.2.2.1 System Configuration

1. System Config

Click [File] → [System Config]. The System config dialog box is displayed, as shown in the following figure.

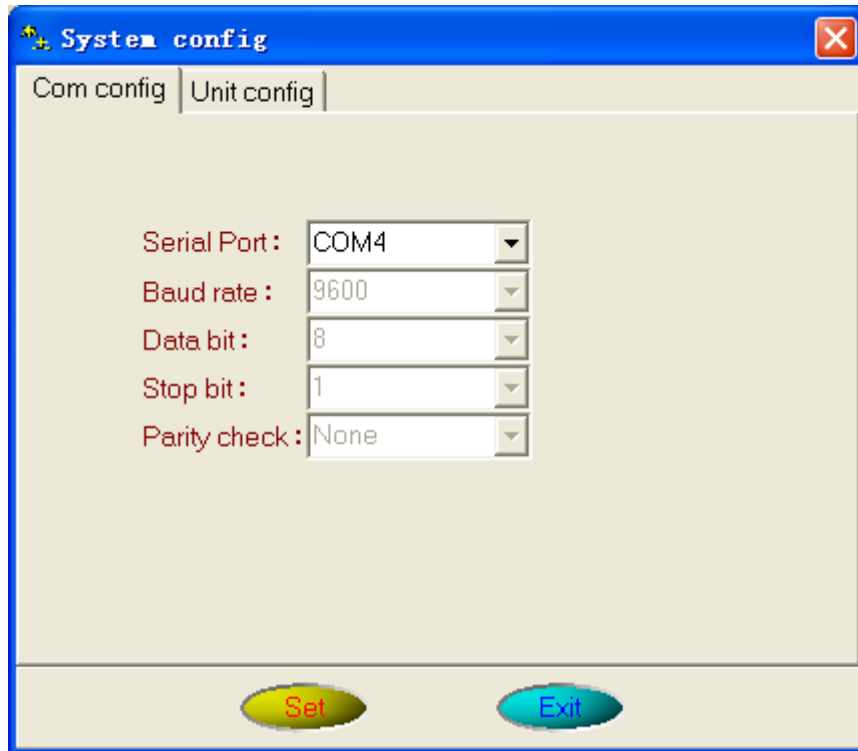


Figure 23 Selecting a Serial Port for Communication

Serial Port

Options: COM1/COM2/COM3/COM4

Function: Select the serial port connected to the terminal.

For details about the other parameters, see section 3.1.2.1 System Configuration.

2. Work Mode Setting

Click [File] → [Work Mode Setting], as shown in the following figure.

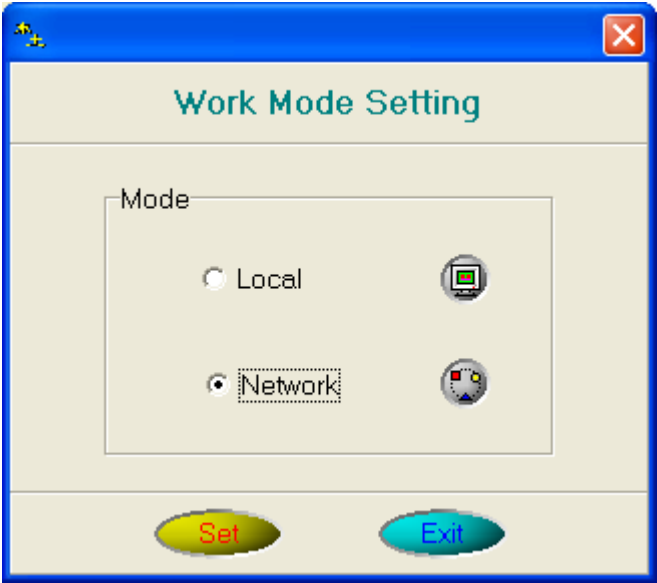


Figure 24 Work Mode Setting

Work Mode Setting

Options: Local/Network

Function: If you select Local, you can view and configure local parameters. In this case, you need to connect the console port of the terminal to a PC with an RJ11-DB9 local cable. If you select Network, you can view the running status and set parameters for the terminals on the entire network. In this case, you need to connect the console port of the terminal to a PC with an RJ11-DB9 network management cable.



Note: The function is mainly used to view the operation status of terminals on the entire network. Therefore, this manual focuses on how to query and configure parameters of terminals in Network Management mode.

3.2.2.2 Configuration Query

Submenu	Function, Description, and Remarks
Terminal Name	Function: Set the name of the terminal.

	<p>Description: For details, see section 3.1.2.4.</p> <p>Note: The latest name configuration always takes effect, regardless of whether it is performed through this submenu or on the local terminal.</p> <p>You can view the current configuration by clicking <Query>.</p>
Fiber port Status	<p>Function: View the fiber port status of the terminal.</p> <p>Description: For details, see section 3.1.2.9.</p>
Channel Config	<p>Function: Configure channels for the terminal.</p> <p>Description: For details, see section 3.1.2.7.</p> <p>Note: The latest channel configuration always takes effect, regardless of whether it is performed through this submenu or on the local terminal.</p> <p>You can view the current configuration by clicking <Query>.</p>
Interface Config	<p>Function: Configure the interfaces of the terminal.</p> <p>Description: For details, see section 3.1.2.8.</p> <p>Note: The latest interface configuration always takes effect, regardless of whether it is performed through this submenu or on the local terminal.</p> <p>You can view the current configuration by clicking <Query>.</p>
Version Number	<p>Function: View the current software version number.</p>

3.2.2.3 Network Management

1. Add Terminal

Click [Network] → [Add Terminal], as shown in the following figure.



The image shows a software window titled "Add Terminal". Inside the window, there are two labels with corresponding input controls. The first label is "Terminal No:" followed by a text box containing the number "1" and a small spinner icon to its right. The second label is "Terminal Name:" followed by a text box containing the text "Terminal 1". At the bottom of the window, there are two buttons: a yellow button labeled "Set" and a blue button labeled "Exit".

Figure 25 Adding a Terminal

Terminal No

Function: Set the address number of the terminal.

Description: The address number should be identical with that configured on the local terminal.

Configuration method: You can enter the address number or click ▲ or ▼ to change the number.

Terminal Name

Function: Set the name of the terminal.

With this function, you can map terminal icons to actual devices one by one. Then you can view the running status of devices intuitively.

After a terminal is added, you can configure and view its properties by the right-click context menu. For details, see section 3.2.2.5 Right-Click Context Menu.

2. Auto Patrol/Stop Patrol

Click [Network] → [Auto Patrol], as shown in the following figure.

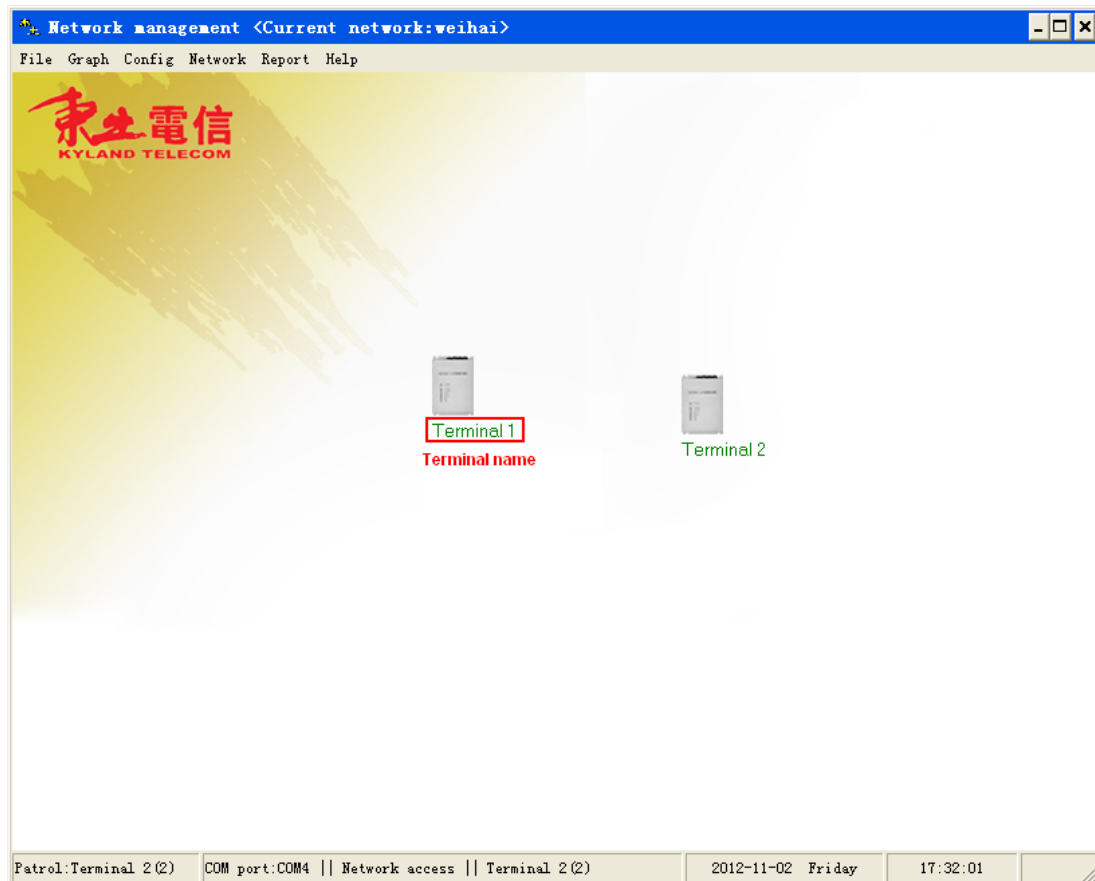


Figure 26 Auto Patrol

Function: Detect the fiber port status of devices on the network.

Description: If the terminal name is green, all the fiber ports communicate properly.

When the terminal name is brown, an anomaly occurs on a certain fiber port. In this case, you can right-click the terminal icon and select [Terminal Communication] → [Fiber port Status] to view which port is faulty.

If the terminal name is red, all the fiber ports communicate abnormally.

You can click [Network] → [Stop Patrol] to stop detection.

3.2.2.4 Report Query

1. Status Record

Click [Report] → [Status Record]. You can view the alarm information on the network, as shown in the following figure.

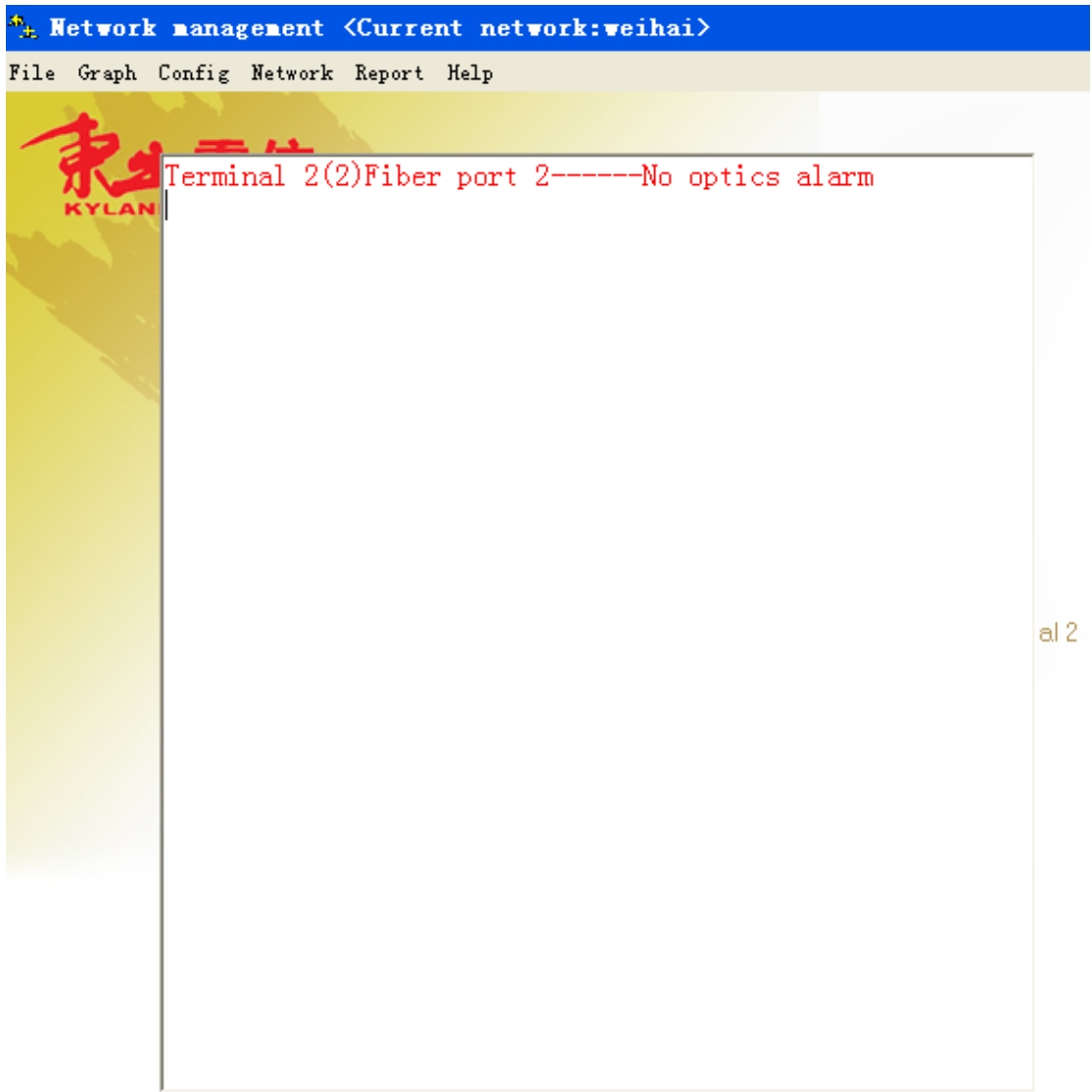


Figure 27 Status Record

2. Status Analysis

Click [Report] → [Status Analysis]. You can view the reason analysis for alarms, as shown in the following figure.

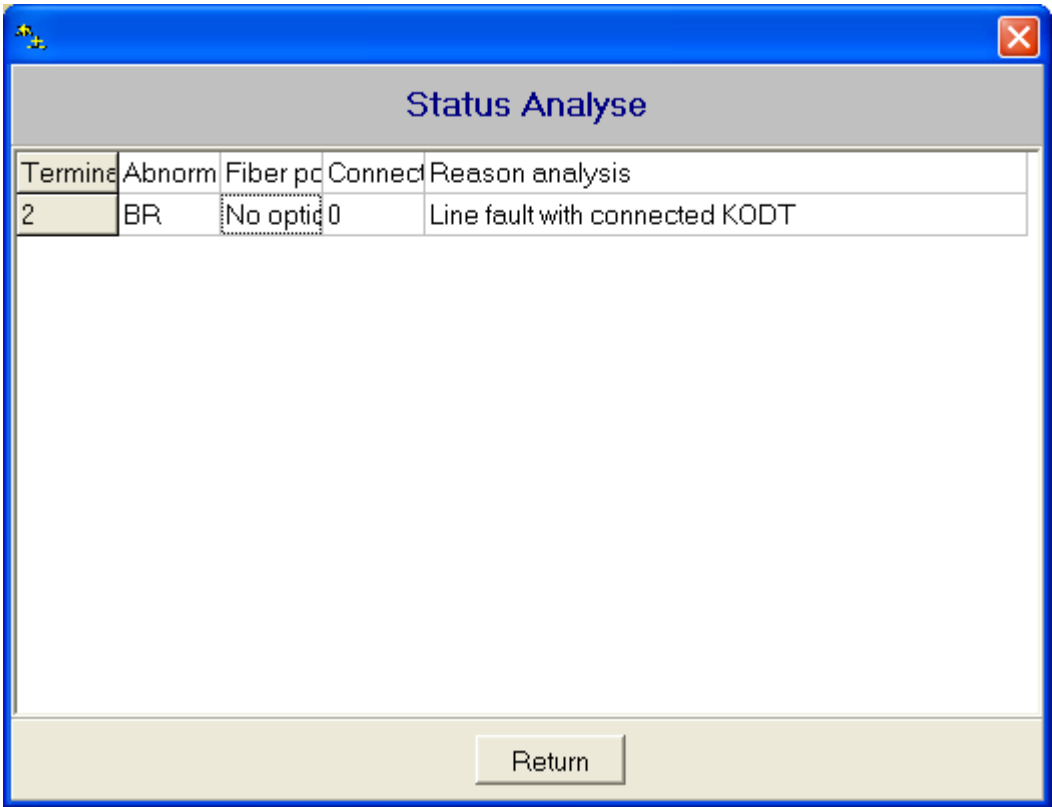


Figure 28 Status Analysis

3. Operation Record

Click [Report] → [Operation Record]. The Operation Record page is displayed, as shown in the following figure. You can click <Query> to view the operation records of the device in a certain period.

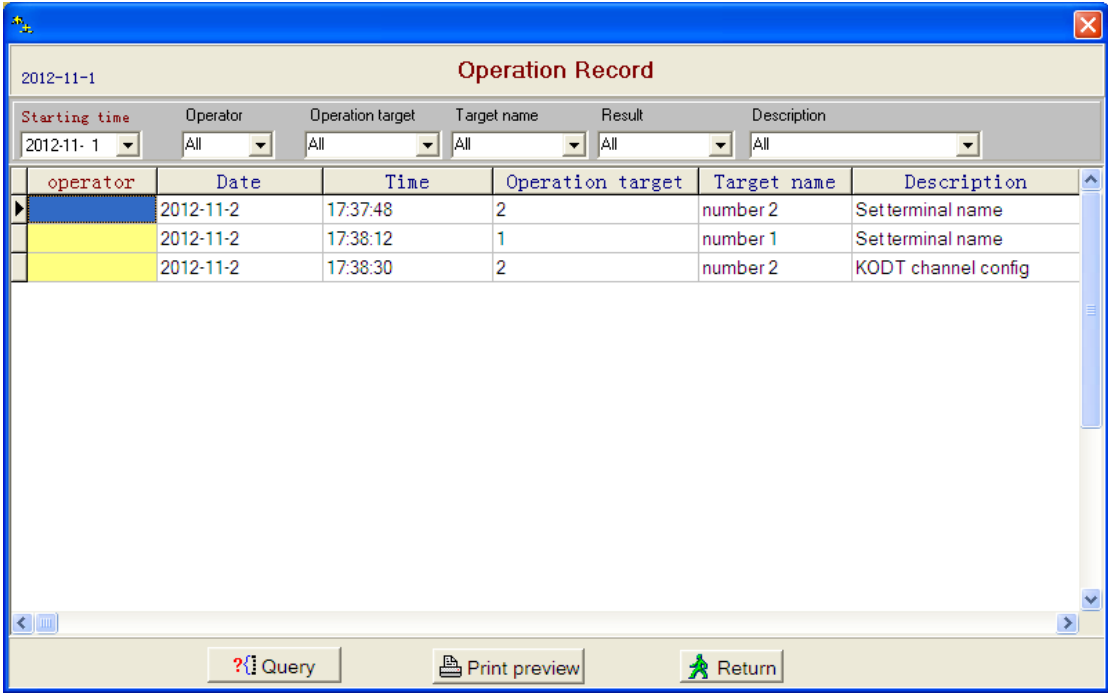


Figure 29 Operation Record

4. History Record

Click [Report] → [History Record]. You can click <Query> to view the running status of the device in a period, as shown in the following figure.

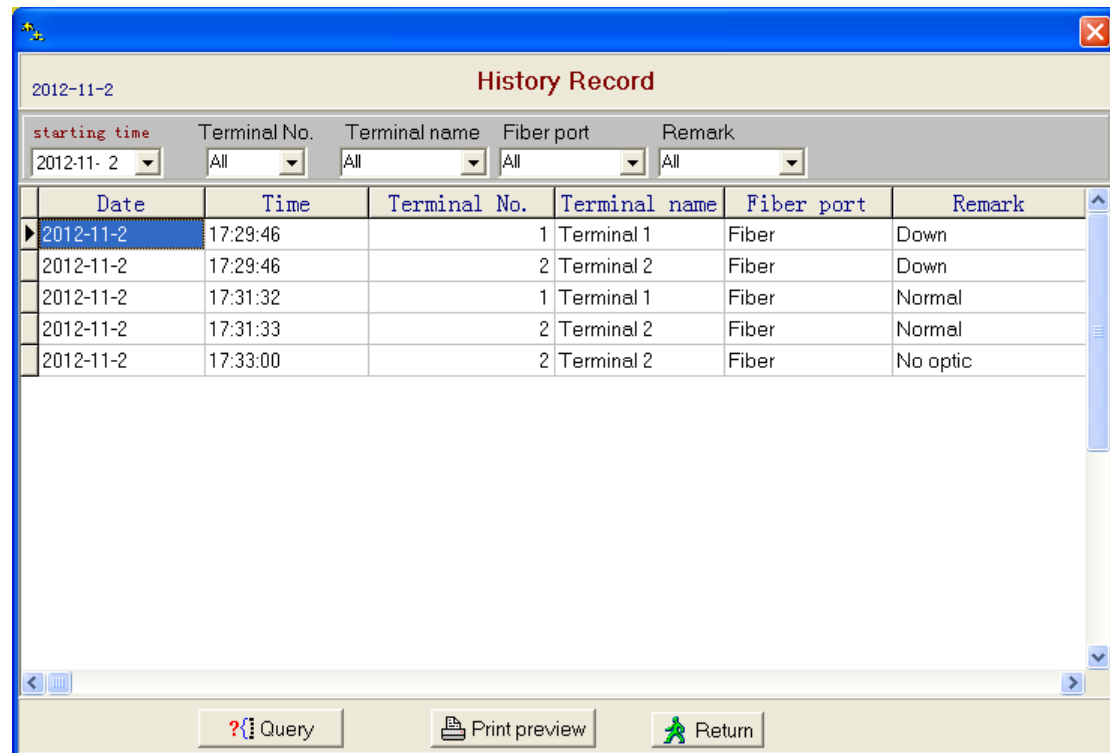
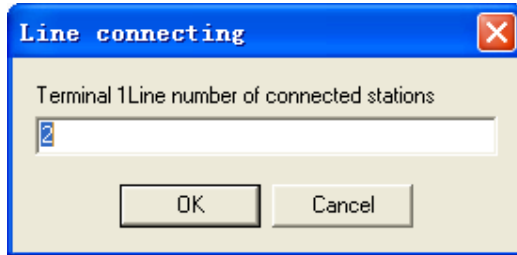


Figure 30 History Record

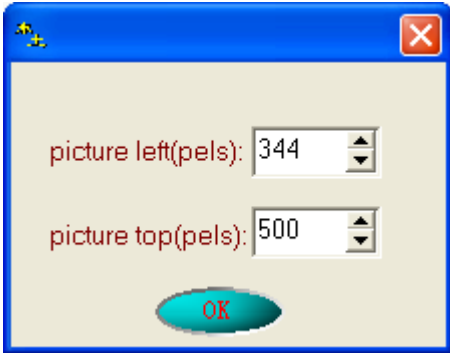
3.2.2.5 Right-Click Context Menu

Operation		Function	Equivalent Menu Operation
Right-click the blank area: →Add Terminal		Add a terminal.	[Network] → [Add Terminal]
Right-click a terminal: →Terminal	→Terminal Name	Set the terminal name. Description: For details, see section 3.1.2.4.	[Config] → [Terminal Name]
Communication	→Fiber port Status	View the fiber port status of the terminal. Description: For details, see section	[Config] → [Fiber Status]

Terminal Configuration

		3.1.2.9.	
	→Channel Config	View the channel configuration of the terminal. Description: For details, see section 3.1.2.7.	[Config] → [Channel]
	→Interface Config	View the interface configuration of the terminal. Description: For details, see section 3.1.2.8.	[Config] → [Interface]
	→Version Number	View the current software version number.	[Config] → [Version]
Right-click a terminal: →Move Terminal	You can move the terminal icons to desired positions.		--
Right-click a terminal: →Stop Moving	After moving terminal icons, you can stop moving them through this operation.		--
Right-click a terminal: →Set Link	<p>Set links between terminals to obtain the network topology.</p> <p>Operations: Right-click Terminal 1 and select Set Link. The Line connecting dialog box is displayed. Enter the number of lines connected to the terminal. Repeat the same operations for terminal 2, 3, 4... to complete setting links.</p> 		--

Terminal Configuration

Right-click a terminal: →Terminate Link	After setting a link, right-click a terminal. The link is terminated on the terminal.	--
Right-click a terminal: →Change Picture	Change the terminal icon.	--
Right-click a terminal: →Picture Location	<p>Set the position of the terminal icon in the window.</p>  <p>Note: You need to specify the icon's space to the left and top margins.</p>	--
Right-click a terminal: →Delete Terminal	Delete a terminal.	--

4 Typical Configuration Examples

4.1 Dual-Fiber Ring Redundancy

The device adopts the fast dual-fiber ring redundancy technology to realize dual-fiber recovery. To be specific, in a dual-fiber network, remote devices and the office device in the data center form a closed circuit. When a device is faulty or a certain fiber is disconnected, the dual-fiber ring redundancy technology of KODT2200 help to connect the network without data losses, ensuring continuous communication and improving network reliability.

As shown in the following figure, three devices are connected to form a dual-fiber redundant ring. Device 1 at address "1" serves as the center terminal; device 2 at address "2" serves as the backup center terminal; device 3 at address "3" serves as the remote terminal. Device 1 is used to query and manage device 2 and device 3. When the link between device 1 and device 3 is faulty, the dual-fiber redundant ring ensures normal data communication.

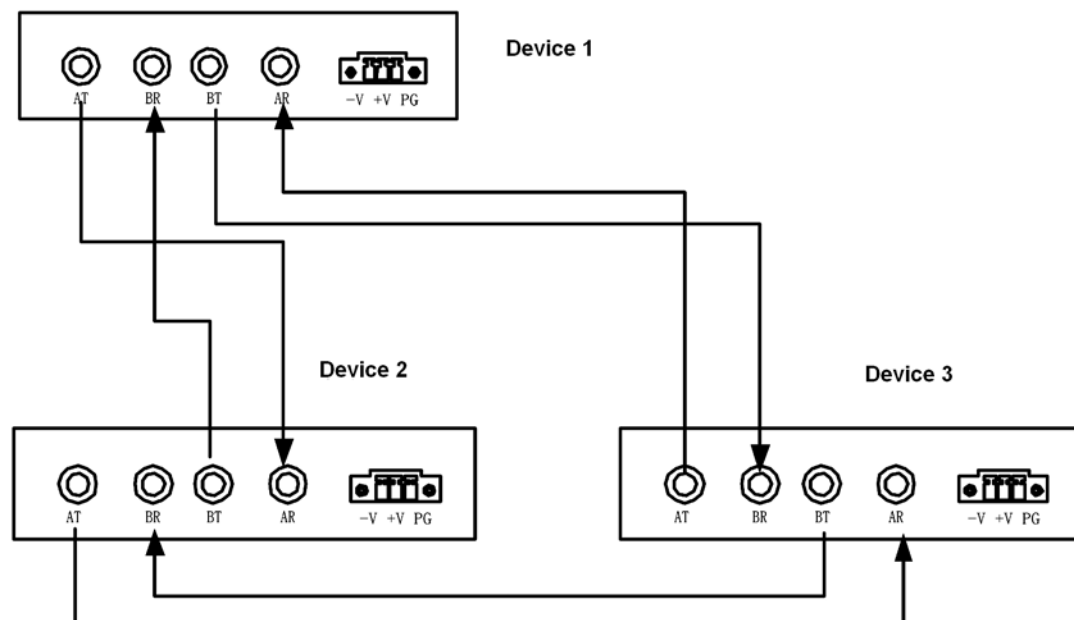


Figure 31 Dual-Fiber Ring Redundancy

Detailed configurations are as follows:

Local management configuration:

1. Connect a PC to device 1, device 2, and device 3 respectively with an RJ11-DB9 local cable.
2. Select the connected serial port, as shown in Figure 12.
3. Open the Local Management interface.
 - Set the terminal address of device 1 to 1, its terminal name to Terminal 1, and its terminal characteristic to Center Terminal.
 - Set the terminal address of device 2 to 2, its terminal name to Terminal 2, and its terminal characteristic to Backup Center Terminal.
 - Set the terminal address of device 3 to 3, its terminal name to Terminal 3, and its terminal characteristic to Remote Terminal.

For details about how to set the terminal address, name, and characteristic, see Figure 14, Figure 15, and Figure 16.

4. Keep default settings for the other parameters.

Network management configuration:

1. Connect the PC to device with an RJ11-DB9 network management cable and select the connected serial port, as shown in Figure 23.
2. Open the Network Management interface. Set the work mode to Network, as shown in Figure 24.
3. Add Terminal 1, Terminal 2, and Terminal 3 for device 1, device 2, and device 3 respectively, as shown in Figure 25.
 - Add Terminal 1 and set its address to 1.
 - Add Terminal 2 and set its address to 2.
 - Add Terminal 3 and set its address to 3.
4. Set links, as shown in Figure 32.
 - Right-click Terminal 1 and select Set Link. The Line connecting dialog box is displayed. Enter 2 (for the connections with two terminals). Click <OK>. Click Terminal 2, Terminal 3, and then Terminal 1 again. The links appear.
 - Right-click Terminal 1 and select Terminate Link.
5. Click [Network] → [Auto Patrol]. You can manage and maintain all the

devices on the network by Terminal 1, namely, the Center Terminal.

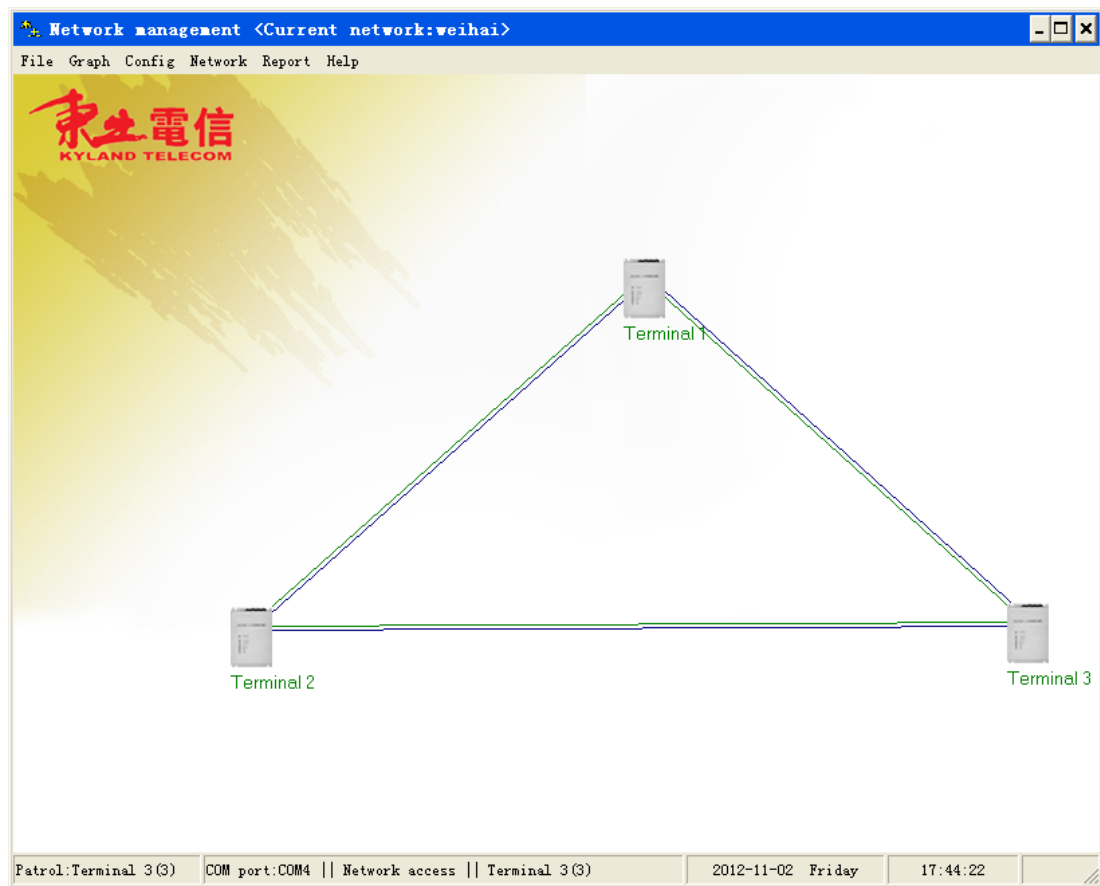


Figure 32 Configuration Example for Dual-Fiber Ring Redundancy

4.2 Local Data Cross-Connect

KODT2200 supports 8×8 data cross-connect. You can configure the function through the network management software as required. If you map several ports to one channel, the device provides the function of a hub.

For example, map all eight data ports to channel 8, as shown in the following figure.

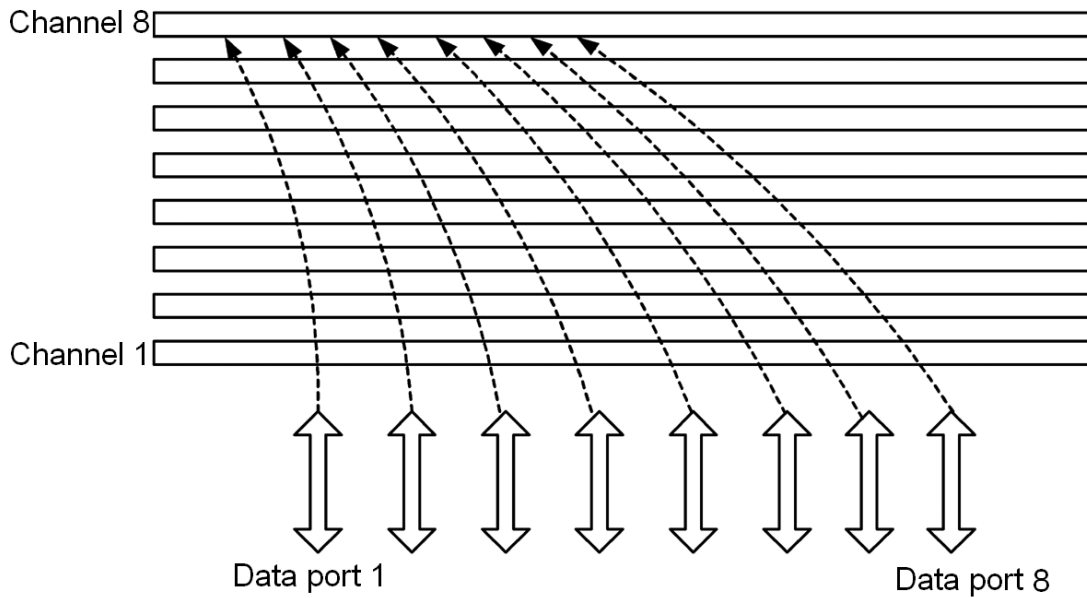


Figure 33 Local Data Cross-Connect

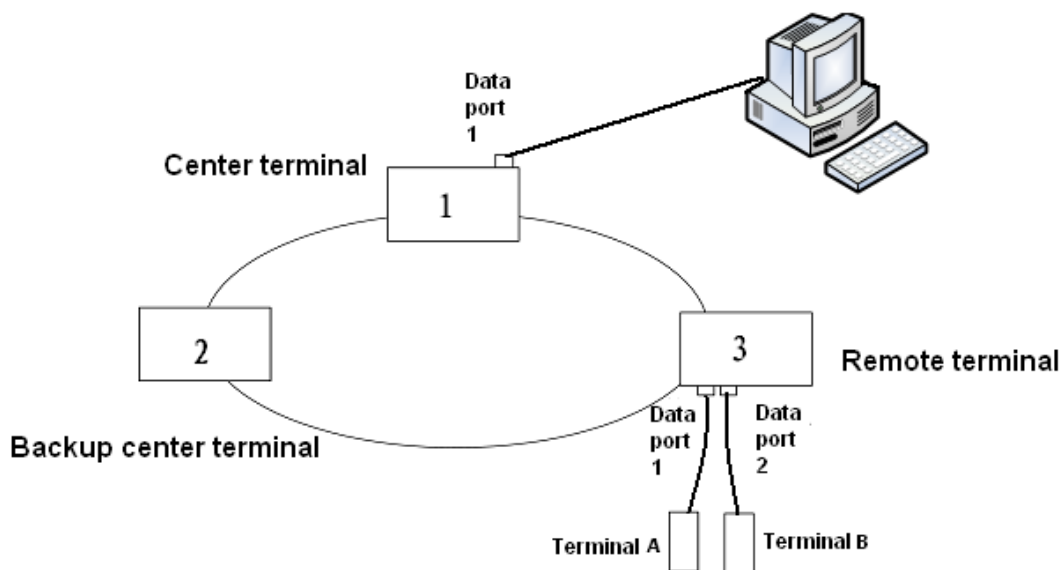


Figure 34 Configuration Example for Local Data Cross-Connect

As shown in the preceding figure, the PC is connected to data port 1 of device 1. Device 1 is the center terminal; device 2 is the backup center terminal, and device 3 is the remote terminal. Data port 1 and data port 2 of device 3 are connected to terminal A and terminal B.

The default mapping between devices and channels are as follows:

Data port 1 is mapped to channel 1.

Data port 2 is mapped to channel 2.

...

Data port 8 is mapped to channel 8.

With the default settings, the PC communicates with data port 1, which is mapped to channel 1. Terminal B communicates with data port 2, which is mapped to channel 2. As a result, the PC cannot communicate with Terminal B.

With the local data cross-connect function, you can map data port 2 of device 3 to channel 1. In so doing, the PC can communicate with terminal A and terminal B.

Detailed configurations are as follows:

1. Connect the terminals and complete settings, as described in section 4.1.
2. Channel configuration: Use an RJ11-DB9 local cable and map data port 2 of device 3 to channel 1, as shown in Figure 18. Keep default settings for the channel configuration of the other devices.
3. Keep default settings for all the other parameters.